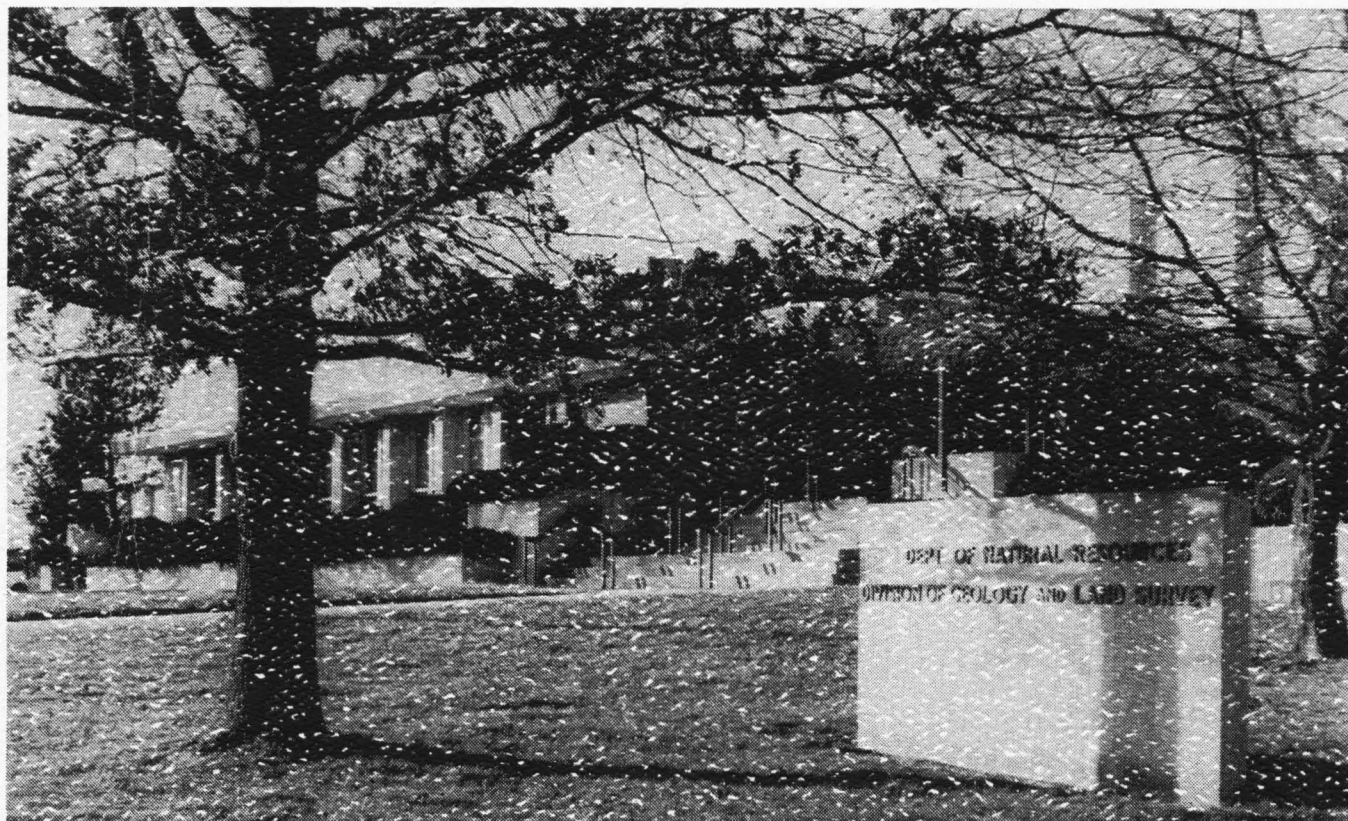


**A BRIEF HISTORY
OF THE
MISSOURI GEOLOGICAL SURVEY
1853-1989**



Missouri Department of Natural Resources
Division of Geology and Land Survey

COVER:

Dedicated in 1963, the Buehler Building is the present headquarters of the Division of Geology and Land Survey. Built in Buehler Park on a 3.5-acre site, three buildings with over 42,000 square feet now house the laboratories and offices of approximately 100 employees.

This pamphlet was reprinted from the
State Geological Surveys - A History,
edited by Arthur A. Socolow, Association of American State
Geologists, 1988, p. 255-264, in observance of the
100th anniversary of continuous service by the
Missouri Geological Survey,
now the Missouri Department of Natural Resources, Division
of Geology and Land Survey.



GEORGE CLINTON SWALLOW

1855-1861



ALBERT DAVID HAGER

1870-1871



JOHN GRANVILLE NORWOOD

1871



RAPHAEL PUMPELLY

1871-1873



GARLAND CARR BROADHEAD

1873-1875



CHARLES P. WILLIAMS

1875-1876



ARTHUR WINELOW

1887-1894



CHARLES ROLLIN KEYES

1894-1897



JOHN A. GALLAHER

1897-1900



LEO GALLAHER

1900-1901



ERNEST ROBERTSON BUCKLEY

1901-1908



HENRY ANDREW BUSHLER

1908-1944



EDWARD L. CLARK

1944-1955



THOMAS R. BEVERIDGE

1955-1964



WILLIAM C. HAYES

1964-1971



WALLACE B. HOWE

1971-1986



JAMES HADLEY WILLIAMS

1986 -

Sketches of the 17 Missouri State Geologists from the original founding of the agency in 1853 to the present. Original drawing, circa 1975, by Douglas R. Stark, and updated by Gary Clark, both former graphic supervisors at the Division of Geology and Land Survey.

**A BRIEF HISTORY
OF THE
MISSOURI GEOLOGICAL SURVEY**

1853 - 1989



Missouri Department of Natural Resources
Division of Geology and Land Survey
P.O. Box 250
Rolla, MO 65401
(314) 368-2100

MISSOURI

Missouri Department of Natural Resources' Division of Geology and Land Survey
111 Fairgrounds Road, Buehler Park, P.O. Box 250, Rolla, MO 65401
Phone (314) 368-2100

HISTORICAL SEQUENCE OF ORGANIZATIONAL NAME:

Geological Survey of Missouri, 1853-61
Missouri Bureau of Geology and Mines, 1870-78
Missouri Bureau of Geology and Mines, 1889-1933
Missouri Geological Survey and Water Resources, 1933-45
Missouri Department of Business and Administration,
Division of Geological Survey and Water Resources, 1945-74
Missouri Department of Natural Resources,
Division of Geology and Land Survey, 1974-present

NAMES AND TITLES OF ORGANIZATIONAL DIRECTORS AND DATES SERVED:

George C. Swallow, State Geologist, 1853-61
Albert D. Hager, State Geologist, 1870-71
Joseph G. Norwood, Temporary State Geologist, Aug.-Nov. 1871
Raphael Pumpelly, State Geologist, 1871-73
Garland C. Broadhead, State Geologist, 1873-75
Charles P. Williams, State Geologist, 1875-78
Arthur Winslow, State Geologist and Director, 1889-93
Charles R. Keyes, State Geologist and Director, 1893-97
John A. Gallaher, State Geologist and Director, 1898-1900
Leo Gallaher, Acting State Geologist and Acting Director, 1900-01
Ernest R. Buckley, State Geologist and Director, 1901-08
Henry A. Buehler, State Geologist and Director, 1908-44
Edward L. Clark, State Geologist and Director, 1944-55
Thomas R. Beveridge, State Geologist and Director, 1955-64
William C. Hayes, State Geologist and Director, 1964-71
Wallace B. Howe, State Geologist and Director, 1971-86
James H. Williams, State Geologist and Director, 1986-present

THE MISSOURI GEOLOGICAL SURVEY

EVENTS LEADING UP TO THE FORMATION OF THE MISSOURI GEOLOGICAL SURVEY

The first white men to enter the Missouri region came in search of precious metals, especially gold and silver. A Frenchman, Philip Renault, who left France in 1719 with 200 men, led one of the early expeditions. In 1720, Renault and a company of 700 men entered the rough hill country of the Ozarks. Although they were disappointed in their cherished dreams of finding large gold and silver deposits, their explorations led to the discovery of lead at Mine La Motte and in the neighborhood of Potosi. Lead mining flourished for a few years in the early 1720s, but the Company of the West had financial problems; it was bankrupt in a few years. Mining was not carried on to any great extent until the late 1790s and early 1800s when many people immigrated to the Ozark region. In 1819 there were 45 operating lead mines worked by 1,100 miners.

Shortly after the United States purchased the territory in 1803, several military expeditions crossed Missouri territory. Among them were the Lewis and Clark expedition in 1804, the Pike expedition in 1805, and the Long expedition in 1819. Several important civilian expeditions were led by men like Featherstonhaugh, Owen, and Schoolcraft. Early expeditions were not regional; most observations were made along a limited strip adjacent to the line

of travel. Since the frontier was moving westward, businessmen, farmers, and immigrants often requested information about Missouri's rock and mineral resources, timber, farmlands, etc. Many influential people, particularly early governors, believed accurate surveys could determine the extent of Missouri's mineral resources. They advocated forming a state survey organization.

In 1838 Governor Lilburn W. Boggs addressed the 10th General Assembly of the Missouri Legislature and recommended that money be appropriated for a geological survey. Nothing came of Boggs' proposal, but the Board of Internal Improvement carried out some geological investigations along several major rivers. In 1846 Governor John C. Edwards urged formation of a survey, but the legislature again refused to appropriate money. In 1850 Governor Austin A. King urged the 16th General Assembly to approve a state geological survey. He believed the Federal Government should contribute most of the money, since they owned two-thirds of the state. As a result, Governor King's proposal died; however, he did succeed in persuading the people of the need for a geological survey. Newspapers carried accounts of the proposed survey, and private papers were distributed. The General Assembly passed an act, on February 24, 1853, that provided for a state survey. Only eight other states had surveys at the time.

On April 12, 1853, George C. Swallow was appointed first State Geologist. The Survey received a biennial appropriation of \$25,000. Swallows' annual salary was \$3,000.

Swallow's instructions were as follows:

To make a thorough geological and mineralogical survey of the state, with a view to determine the order, succession, arrangement, relative position, dip or inclination and comparative magnitude of the several strata, or geological formations within the state; and to discover and examine all beds or deposits of ore, coal, marls, and such other mineral substances, and mineral waters, as may be useful or valuable; and to perform such other duties as may be necessary to make a full and complete geological and mineralogical survey of the state. ... To make in triplicate a collection of all the significant rocks, minerals, coals, fossils, etc. in the state and also to draw accurate maps of each county showing by colors or other means, the prairie, timber, bottom lands and geological formations.

Swallow hired five assistants in St. Louis. Two held M.D. degrees, one was

a civil engineer, one was a chemist, and one was a draftsman who doubled as a geologist. Each assistant received \$1,800 annually and was required, before a judge, to take an oath that he

would carry out his duties faithfully.

The first headquarters of the Survey were at Columbia, Missouri, from which expeditions went out by foot, boat, wagon, and train. Swallow describes some of his early expeditions in his diary. On one expedition he and his assistants rode a paddlewheel boat up the Missouri River to Council Bluffs, Iowa, where they disembarked, floated down the river in rowboats,

and studied the geological formations.

After 18 months of field work Swallow published the 1st and 2nd Annual Reports of the Missouri Geological Survey. Those documents discuss the geology of the state and include reports on five counties and on the most valuable mineral resources. By 1860, geological investigations in 80 counties had been completed. Most of the work was carried out along the principal rivers and the railroads. With the advent of the Civil War geological investigations ceased and the first geological survey was abandoned in 1861. Swallow, a Maine Yankee, joined the Union cause. We next hear of him in 1865, when he was State Geologist of Kansas.



George Clinton Swallow, first State Geologist of Missouri, 1853-61.

SECOND MISSOURI GEOLOGICAL SURVEY

Two state representatives introduced a bill, in March 1870, that established the second Geological Survey. Headquarters were at Washington University in St. Louis. A Board of Directors, which included the governor and nine members, controlled the new organization, the name of which was changed to the Missouri Bureau of Geology and Mines, a designation retained until 1933. The annual appropriation was \$10,000. The second survey continued work abandoned because of the Civil War.

Swallow wanted the job again but failed because, as he wrote:

Through political prejudice and the slander of those who wanted the place and a few whom I displeased by refusing to report mines to...or to find valuable mines on their land.

A.D. Hager was chosen State Geologist in August 1870, but he resigned the post in August 1871. J.G. Norwood, one of Swallow's assistants in 1858, became temporary State Geologist. Raphael Pumpelly, who succeeded Norwood in November 1871, published two reports during his tenure. The work for one of them, a report on the geology of 20 counties, was mostly done during Swallow's time. Pumpelly also issued a volume on iron ores and the coal resources of nine counties. These and other early reports were of great importance in developing Missouri's mineral economy.

In 1873, the Survey staff comprised seven geologists and a chemist. There was an economic panic that year, and the Survey was having money problems. (In 1873, 11 of 18 state surveys

survived the panic.) The Survey's economic problems were exemplified in a letter, dated January 22, 1873, from a Pilot Knob shopkeeper to Pumpelly:

I have a little bill against the Survey for cabbages sold to your man amounting to \$5. He put me off with the excuse that you had not paid him yet. He also owes me \$10 for a coat I let him have on Christmas day; as he had no coat to wear, I let him have it. If you can pay me the amount due me of \$15, you will greatly oblige.

Pumpelly resigned in July 1873, and was replaced by Garland C. Broadhead, under whom the Survey continued doing county reports. *The Field Work of 1873-74*, which contains reports on iron, lead, and coal resources of various counties, was published. An outstanding report, it is still an important reference work. Broadhead also published a geologic map of northern Missouri. His excellent development of the geologic column in Missouri, including classically detailed information on the Pennsylvanian deposits, were contributions of major significance.

Broadhead resigned in 1875, when the legislature moved the Survey to the Missouri School of Mines at Rolla, an economy move. The legislature hoped to appoint the Director of the School of Mines, Charles Williams, State Geologist. The Survey's appropriation was cut to \$5,000. Williams received an annual salary of \$2,000, which was \$1,000 less than that of the former state geologists. Shortly, Williams' pay was cut to \$1,500. About that time, a strange twist of events occurred. The Phelps County representative brought a lawsuit against Williams for taking money under false pretenses. It appears that the legislative act that moved the Survey to

Rolla also stipulated that the State Geologist must be a Professor of Geology. Since the University of Missouri Board of Curators refused to appoint a Professor of Geology, Williams was charged with taking money under false pretenses. Williams beat the charge, but he resigned his position and left Rolla in 1878.

THIRD MISSOURI GEOLOGICAL SURVEY

The Survey was dormant until May 1889, because the legislature refused to appropriate money for it. In May 1889, however, the legislature revised the law that had created the Second Survey in 1870. The organization was put under the directorship of a Board of Managers comprising the governor and four prominent citizens, most of who had worked for reestablishment of the Survey. Arthur Winslow, formerly of the Arkansas Survey, was appointed State Geologist at an annual salary of \$3,000. The Survey received an appropriation of 20,000 annually. There was prolonged discussion concerning location of Survey headquarters. Broadhead wanted them in Columbia. A Mr. Blair of Sedalia wanted them in Sedalia—he even offered free rooms. The Board of Managers finally decided on Jefferson City, because it was near the legislature.

During the first 2 years of Winslow's term, reports were published on coal, iron ores, and mineral waters. Topographic mapping with the U.S. Geological Survey was begun about 1890.

On December 1, 1893, the Board of Managers decided that Winslow was not turning out enough publications; they even charged him with delaying impor-

tant publications in order to receive more appropriations. The Board ordered him to finish a report on the lead and zinc deposits by June 1, 1894, or he would be fired. Winslow replied that he would not be intimidated by threats. On April 2, 1894, he was fired, and Charles R. Keyes, a paleontologist under Winslow, became State Geologist. Winslow, in order to show he had not been loafing, published two volumes on lead and zinc, on his own time. He accepted reimbursement only after the Board accepted his work for publication.

Keyes remained State Geologist until January 1, 1899, when the Board decided that he was unsatisfactory and voted him out of office. During Keyes term, seven volumes were published, most of them on paleontology, clays, and areal geology. Some noteworthy geologists working under Keyes were Haworth, Marbut, Shepard, and H.A. Wheeler. Keyes also revised the State Geologic Map in 1896.

On July 1, 1898, John Gallaher, an M.D. who studied geology under Shumard, was appointed State Geologist. Gallaher was strictly a geologist and did not believe in mixing geology with engineering, as a paragraph from his biennial report of 1898 clearly testifies:

On entering the office, the geologist found that a considerable amount of money had been expended on engineering instruments, photographic apparatus, laboratory equipment, engravings for printing topographic maps and many things pertaining more to a School of Engineering or Physical Geography than to a Geological Survey. Seeing that the energies of the Survey had been thus



The metal on the right was awarded to the Missouri Geological Survey at the World's Columbian Exposition in Chicago in 1892-1893, which commemorated the four hundredth anniversary of the landing of Columbus. The award was for "the scientific and commercial value of the information contained" in Volume 1, Preliminary Report of the Coal Deposits of Missouri, by Arthur Winslow. In 1904, at the Louisiana Purchase Exposition (St. Louis World's Fair) the Missouri Geological Survey won a gold medal (to the left of the Columbian Exposition medal) for the series of reports, Volume I through Volume XIII, published from 1891 through 1900, describing the mineral and water resources, geology, and paleontology of Missouri.

largely expended on the ornamental without having duly emphasized the economic features of the work, the present management determined at once to eliminate all such ornamental or irrelevant facies and go directly after the fundamental facts, which make the only logical foundation for a Geological Survey.

Gallaher contracted drillers to drill for oil and gas in northwest Missouri and for iron in the Ozarks; \$10,000 was appropriated. Some holes reached 3,000 feet in northwest Missouri.

After 2 years of hard work Gallaher published a report; the first part is strictly philosophy, but the second part is regarded by some as outstanding. Gallaher placed the Cambrian-Ordovician bound-

ary at the top of the Eminence Formation, still the currently recognized boundary. Gallaher died in office in 1900.

After Gallaher's death, his son Leo became Acting State Geologist. Leo, who spent much of his time eulogizing his father, wrote as follows:

This is a volume of 250 pages by John A. Gallaher, September 1900. In this report, the author in a style almost unsurpassed for clearness and force differentiates and classifies the geological formation of the state so vividly that anyone of very ordinary intelligence can readily grasp the great fundamental facts of Missouri Geology. It forms a basis for all the reports to follow. Such a report is as essential to a clear and

comprehensive exposition of the Geology of the state as is a knowledge of the alphabet to the language. It is a real pity that the necessity for such a work was not foreseen at the very establishment of the Survey for then a vast amount of useless and irrelevant work of past years would have been avoided.

Although Leo Gallaher was Acting State Geologist for only a few months he did initiate one important program. He sent letters to drillers throughout the State asking for their drill records. This might be called the first attempt at organizing a subsurface program.

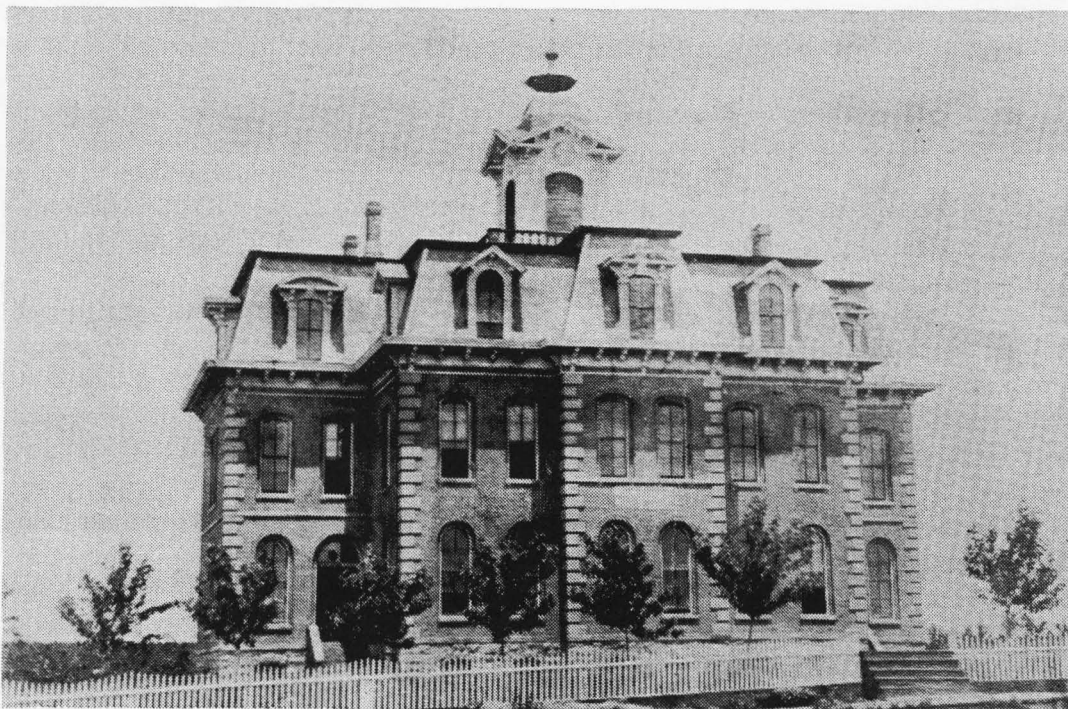
In 1897, a significant development occurred. Dr. Ladd, Director of the School of Mines and formerly a geologist under Winslow, began working to have the Survey moved back to Rolla,

from its location at Jefferson City. Thirty newspapers joined Ladd in this fight, and in 1901 the Survey was returned to Rolla. The Board refused to pay the cost of moving, however, so the people of Rolla donated money and the railroads provided free transportation. In Rolla the Survey was housed in a dormitory, which is now the Chancellor's Residence. In 1904, it was moved to the Rolla Building, where it remained until 1946. This was the second period of association of the Survey with the Missouri School of Mines, an association that is one of long duration and of value to both institutions.

When the Survey was returned to Rolla in 1901, a new State Geologist, E.R. Buckley, from the University of Wisconsin, was appointed. He brought



Formerly the headquarters of the Missouri Bureau of Geology and Mines from 1901 to 1904, this building is now the Chancellor's residence of the University of Missouri-Rolla.



The Rolla Building was home of the "Missouri Bureau of Geology and Mines" and the "Missouri Geological Survey and Water Resources" from 1904 to 1946.

with him a young assistant, H.A. Buehler, who was later to become one of Missouri's most outstanding State Geologists.

Under Buckley (1901-08) the Survey was productive. Eight volumes were published, most of them dealing with quarrying, cement resources, and the geology of various counties. The State Geologic Map was revised and several topographic maps were completed in cooperation with the USGS. Buckley wrote a major study of the lead deposits of St. Francois and Washington Counties, a report of great value in Missouri's developing lead mining industry; it also advanced theories about the origin of the lead ores.

Buckley resigned in April 1908, and his former assistant, H.A. Buehler, became State Geologist, a post he held for 36 years. Many changes occurred dur-

ing Buehler's tenure. Until his time, field work was done by boat, horse, foot, or railroad. F.C. Greene, one of the Survey's most productive geologists, tells of getting off a train several miles from the town where he was to spend the night and walking down the tracks studying the rocks as he walked. In 1910, three of Buehler's assistants barely escaped with their lives then their horses and rig were swept downstream as they tried to ford a flooded stream. The horses drowned and the rig was damaged to the extent of \$350. By the early 1920's however, the Survey was using automobiles, but not without difficulty, as is indicated in this letter, dated May 24, 1924, from Josiah Bridge to Assistant State Geologist, W.F. Pond:

The engine runs beautifully, but how I ever got here is a mystery. The car

had dried out so thoroughly last winter that all the spokes in the rear wheels came loose, and I could rattle each one of them. So yesterday afternoon I pulled off all the wheels and tightened up the bolts and put them to soak in the creek. A few days of running through creeks will probably fix them okay. Might be a good idea to warn Dake about his wheels before he starts out.

In 1919 the Survey was losing many trained personnel to oil companies, who were willing to pay a trained geologist over \$4,000 annually, compared to \$1,800 annually at the Survey. In 1919 Buehler asked the Board of Managers to raise salaries or abolish the Survey. Governor Gardner replied as follows:

The salary of the Secretary of State is \$3,000 per year. The salaries of the State Treasurer and the Attorney General are also \$3,000 a year. The

members of the legislature are paid \$5 per day. In other words, if a change in salary was made it would have to, in all fairness, apply to all employees of the State. Also, the prohibition amendment will make it necessary to raise \$3,000,000 additional revenue for this biennial period. Sorry.

Somehow, Buehler managed to get salaries raised in 1921. His salary was increased from \$3,000 to \$5,000, the first raise in the 68 years since the Survey was founded in 1853.

From 1908 to 1930 the Survey published 16 volumes, including reports on coal, oil and gas, and water resources. In 1908, the Survey began sending sample sacks and drill record books to drillers, a significant step in accumulating the subsurface data that led to the Survey's extensive log files. The State Geologic map was revised during the period 1912-



By the early 1920s, the Survey had replaced horses with automobiles. With one of the early staff cars are (left to right) E.O. Ulrich, Josiah Bridge, H.S. McQueen, C.L. Dake, and H.A. Buehler.

1922. Some of the better known geologists connected with the Survey at this time were Wallace Lee, F.C. Greene, Henry Hinds, and C.L. Dake.

In 1933, the Board of Managers was abolished and the Survey was made a separate department in state government. The name was also changed from the Bureau of Geology and Mines to the Missouri Geological Survey and Water Resources. It remained as a department of state government until 1945, when Senate Bill No. 348 created the Department of Business and Administration, which included the Division of Geological Survey and Water Resources.

During the 1930s and early 1940s the Survey published several volumes on fireclay, oil and gas, surface water, springs, and pyrite. It also began publishing shorter reports as appendices in the Biennial Reports. The State Geologic Map was again revised in 1939. The subsurface geology section did extensive research on insoluble residues principally as a means of zoning Cambrian-Ordovician dolomites.

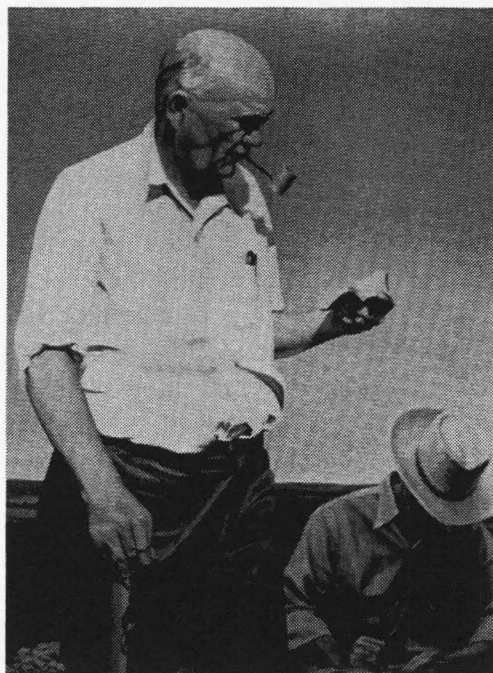
In 1944 Buehler died suddenly while attending a Board Meeting of the Highway Department at Jefferson City, and Ed Clark became the State Geologist. Under Buehler the Survey had been gradually built up until it gained national recognition. Most of its trained personnel, however, left to work for oil companies during World War II. One of Clark's main jobs was that of building up a staff depleted during the war years. In 1944 the Survey had only two trained geologists.

In September 1946, the Survey moved from the Missouri School of Mines campus to a former USO building. The Rolla Building was needed for classrooms when enrollments increased after World War II.

Under Clark the Survey addressed a wide range of problems and issues following World War II. Much emphasis was placed on acquiring and developing additional staff, providing support to Missouri's mineral industry, developing water resources, and on other activities.

During Clark's term (1944-55) shorter reports, Information Circulars and Reports of Investigations began to be published. Reports on springs, surface waters, and several aeromagnetic maps were also published.

In 1955 Clark resigned to take a position with the Four Corners Uranium Company. T.R. "Tom" Beveridge then assumed leadership as the 14th State Geologist. Under Beveridge's guidance, volumes on caves, subsurface geology and on the stratigraphic succession in Missouri were published, along with sev-



H.A. "Chief" Buehler, State Geologist of Missouri, 1908-44, from a painting by John W. Koenig.

eral guidebooks covering the northeastern, western, and the Ozark regions of Missouri. The State Geologic Map was revised in 1961. From 1955 to 1960, 1,209 test holes were drilled in 19 counties in northwestern Missouri, a program intended to gain more knowledge of the groundwater possibilities of Pleistocene deposits. A total of 16 groundwater reports were published. Beveridge also established the ground work for expanding engineering geology in the Survey, the statutes of which for years cited such studies as a responsibility of the State Geologist. Site investigations of waste-disposal facilities, dam sites, landslides, mine collapses, and the like became Survey routine. Tom was noted for his ability to work with the legislature and the public, partly because of his infectious good humor. He often told the story of a farm lady, who when he asked permission to look at some bedrock exposures on her land, asked him, "Do you get paid to do that?" In 1964, Tom left the Survey to accept a position as Professor of Geology at the University of Missouri-Rolla. Just before his resignation, the staff of the geological survey moved into a new building with excellent office and laboratory facilities, the present home of the Missouri Division of Geology and Land Survey. A new headquarters building had been one of Beveridge's goals while serving as State Geologist.

When Beveridge resigned, Assistant State Geologist William C. Hayes replaced him. Hayes developed an organization structure of the Geological Survey that generally remains in effect today. He organized the work of the Survey by sections, in line with major statutory responsibilities, which include economic, water resources, engineer-

ing geology, geologic and subsurface studies, and information services. Bill had a background in the economic geology of Midwestern mineral deposits. During his tenure, exploration of the Viburnum Trend was becoming a profitable venture for a number of companies. The Survey's major role in that development included consultation with the geological staff of each of the major mining companies that participated in the exploration and development activity, and assistance in logging and stratigraphic interpretation of exploration drilling. The availability of drilling data at the Survey was an essential supporting factor in each company's exploration program. Bill also had an engineering background and continued to develop engineering geology in the Survey, which was far ahead of most institutions in such studies. Bill resigned his position as State Geologist in 1971 and returned to Springfield, his home town, where he continued his work in engineering geology until his retirement.

Following Hayes' resignation in 1971, Wallace B. (Wally) Howe was appointed State Geologist, and with the passage of the Omnibus State Governmental Reorganization act of 1974, Howe became Director of the Division of Geology and Land Survey, Missouri Department of Natural Resources. His duties also included general supervision of the State Land Survey Program, administration of State Oil and Gas Council activities, service on Land Reclamation Commission, and development of a State Dam and Reservoir Safety Program. Interactive relationships with other divisions of the department, particularly the Division of Environmental Quality, were developed in order to help insure the



The United Service Organizations (USO) building at 9th and Rolla streets served as home for the Survey from 1946 until 1963 when the present offices were dedicated.

greatest benefits of reorganization. Engineering geology, groundwater geology, and water resources activities, along with coal and oil and gas investigations became increasingly important during the period of Howe's administration of the survey (1971-86). Broader and more comprehensive cooperative programs with U.S. Geological Survey and U.S. Bureau of Mines were established, and increasing emphasis was placed on program enhancement through grants and contracts with federal and other entities. Efforts begun in 1971 and 1972 to develop automated data systems for the Survey were unsuccessful but continued interest and receptivity by the geological staff helped insure the success of a departmental thrust in that critical area, beginning in the early 1980's.

Robert E. Myers was appointed State Land Surveyor in 1971 and is responsible for assuring that all surveys in Missouri meet minimum standards, and for maintaining all land survey records and making them available to the general public. The State Land Surveyor also directs surveys for resolving political boundary problems.

During the initial period of Howe's administration, Larry D. Fellows was appointed Assistant State Geologist and had major responsibility for assistance in program development. Fellows resigned in 1979 to become the State Geologist at the Arizona Geological Survey, and Jerry D. Vineyard, a long-time member of the Survey staff, was appointed Assistant State Geologist.

In January 1986, James Hadley Williams succeeded Wally as State Geologist and Division Director. The current period is marked by major state government reduction in support funding. In an effort to meet statutory responsibilities, a much greater emphasis has been placed on seeking outside funding. The outcome of this trend is yet unknown, but many excellent projects have been completed. They include the USGS Conterminous United States Mineral Assessment Program (CUSMAP), engineering geology studies, and geologic reports on watersheds and counties, all of them supported to some extent by federal funds. Another trend has been fee-supported work. The Land Survey Program has responsibility for all land survey records in Missouri and the recovery of surveyed corners. These records, 1.3 million, are available to the general public and the entire program is supported by fees.

The Dam and Reservoir Safety Program was established in 1981. This program, vital to public safety, is an example of the Survey's mission to respond to the safety and welfare of Missouri citizens.



WHEREAS, May 18, 1889 marks the 100th anniversary of continuous service to the people and to the State of Missouri by the State Geological Survey, now the Division of Geology and Land Survey, and recognizing that this agency, first established by the Missouri General Assembly in 1853, following the successive recommendations of Missouri Governors Lilburn W. Boggs (1838), John C. Edwards (1846) and Austin A. King (1850), became the eighth state to authorize the formation of an agency to assess its natural resources; and

WHEREAS, through the leadership of a series of State Geologists appointed to administer its operations, this agency has contributed significantly to the public understanding and development of the broad mineral, land and water resource base that constitutes the heritage of Missouri citizens, through a broad spectrum of research services carried out over a period now totaling nearly 120 years; and

WHEREAS, the Division of Geology and Land Survey has a long history of mutual association with the colleges and universities of the State, providing for increased levels of research pursuant to State developmental and related requirements; and

WHEREAS, in the course of the history of the agency it has encouraged and supported the initiation and development of agencies and institutions required with the State's population growth and economic development, including Department of Highways, Division of State Mine Inspection, Water Pollution Control Board, Water Resources Board, Division of Economic Development, and Division of Parks, among others; and

WHEREAS, the Division of Geology and Land Survey has joined in cooperative and other mutually-productive, long-term working relationships with appropriate Federal agencies, including U.S. Geological Survey, U.S. Bureau of Mines, U.S. Department of Agriculture, U.S. Corps of Engineers, U.S. Environmental Protection Agency, among others, each and all in the interests of the common good; and

WHEREAS, as certain governmental and societal needs arose, the Division of Geology and Land Survey has participated in developing and has supported new agency-level entities including the State Land Survey, State Oil and Gas Council, Dam and Reservoir Safety Council, Land Reclamation Commission, and Clean Water Commission, among others; and

WHEREAS, the evolving development of Missouri's Department of Natural Resources (established in 1974) the Division of Geology and Land Survey has contributed substantially toward the increasing stature of that department's divisions of Environmental Quality; Energy; and Parks, Recreation, and Historic Preservation; while, the Division of Geology and Land Survey increased its stature and role in modern society;

NOW, THEREFORE, BE IT RESOLVED that the members of the Missouri Senate extend to the Division of Geology and Land Survey their congratulations in recognition of its service as an institution that has provided essential research and information to the State and its citizens for 100 consecutive years since May, 1889 and for a period beginning in 1853; and

BE IT FURTHER RESOLVED that the Secretary of the Missouri Senate of the 85th General Assembly, in Regular Session, be instructed to send duly inscribed copies of the resolution to the Missouri Division of Geology and Land Survey at Rolla, Missouri; to the Office of the Director, Missouri Department of Natural Resources in Jefferson City; and to the Governor of the State of Missouri.

Offered by Senator Lybyer

STATE OF MISSOURI:
CITY OF JEFFERSON:
SS
SENATE CHAMBER :

I, James L. Mathewson, President Pro Tem of the Senate, do hereby certify the above and foregoing to be a full, true and complete copy of Senate Resolution No. 254, offered into and adopted on April 19, 1989, as fully as the same appears of record.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of the Senate of the State of Missouri this 19th day of April, A.D. 1989.



James L. Mathewson

PRESIDENT PRO TEM
85TH GENERAL ASSEMBLY

MISSOURI DEPARTMENT OF NATURAL RESOURCES

November 1993

David A. Shorr, Director

Division of Geology and Land Survey

*James Hadley Williams, Ph.D., Acting Director and State Geologist

Tami Allison, Division Secretary (314-368-2101)

ADMINISTRATION AND GENERAL SUPPORT PROGRAM

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